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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,833	12/13/2001	Sophie Vrzic	7000-114	1051

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WITHROW & TERRANOVA, P.L.L.C.
P.O. BOX 1287
CARY, NC 27512

EXAMINER	
MEUCCI, MICHAEL D	
ART UNIT	**PAPER NUMBER**
2142	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/020,833	VRZIC ET AL.	
	Examiner	Art Unit	
	Michael D Meucci	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/13/01, 02/25/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3, 12, and 21 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 3, 12, and 21 recite the limitation "... to reduce the variance" in lines 4, 4, and 4-5 respectively. The limitation "minimizing the variance" is supported throughout the specification (abstract, paragraphs [0007], [0018], [0039], etc.). The claims should reflect this aspect of the present invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 10, 19, and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Bahl et al. (U.S. 6,795,865 B1) hereinafter referred to as Bahl, in view of Ketcham (U.S. 6,363,429 B1). Claims 10, 19, and 28 have substantially the same limitations as stated in claim 1 and are rejected under the same rationale.

As per claims 1, 10, 19, and 28, Bahl teaches: a network interface for receiving data from a communication network (lines 42-49 of column 5); a wireless interface for transmitting units of the data to a plurality of access terminals (lines 14-28 of column 1); a control system associated with the network interface and the wireless interface and adapted to generate a prioritization factor for each unit of data, the prioritization factor being controlled in proportion to a required data rate associated with each unit of data (lines 50-63 of column 2); the prioritization factor being controlled to achieve an adaptive fairness objective (lines 6-10 of column 1, lines 2-10 of column 2, and lines 11-18 of column 2); and scheduling transmission of each unit of data based on the prioritization factor (line 55 of column 2 through line 3 of column 3).

Bahl fails to teach: storing the data received over the communication network as units corresponding to the plurality of access terminals. However, Ketcham discloses: "In one exemplary preferred embodiment of the present invention, at Step 34 a data buffer is maintained including multiple data structures for multiple data packets that have arrived on a data stream 18 between a source network device 14 and a destination network device 16 on the computer network 12 during a current time interval. An exemplary data structure used in the data buffer for data packets is illustrated in Table 1. However, the present invention is not limited to the data structure illustrated in Table 1, and other data structures with more or fewer data structure fields can also be used in the data buffer for data packets," (lines 8-18 of column 7). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to store the data received over the communication network as units

corresponding to the plurality of access terminals. "The data structure illustrated in Table 1 is stored in the data buffer in a fashion that facilitates both rapid resolution of a calculated data traffic signature to known data traffic signatures as well as rapid cleanup of entries for data streams that have sent no data for significant periods of time (e.g., greater than 1 minute). In one exemplary preferred embodiment of the present invention, the data structures are stored in a circular buffer, with a fixed size related to a maximum packet arrival rate and required arrival time period for a general data stream. The circular buffer includes a spanning tree to locate the data structures based on source/destination network addresses and/or on source/destination network ports or sockets (see Table 1)," (lines 30-42 of column 7 in Ketcham). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to store the data received over the communication network as units corresponding to the plurality of access terminals in the system as taught by Bahl.

Bahl also fails to teach: the prioritization factor being controlled to maintain a minimum desired data rate associated with each unit of data. However, Ketcham discloses: "Class-of-service parameters typically include maximum downstream data rates, maximum upstream data rates, upstream channel priority, guaranteed minimum data rates, guaranteed maximum data rate and other parameters," (lines 57-61 of column 1). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the prioritization factor controlled to maintain a minimum desired data rate associated with each unit of data. "There have been attempts to use Class-of-Service ("CoS"), Quality-of-Service ("QoS") or Type-of-Service

("ToS") parameters in routers and switches in computer networks. As is known in the art, a router routes data packets to an appropriate device on a network topology. A switch switches data among multiple channels and/or time slots. A Class-of-Service provides a reliable (i.e., error free, in sequence, with no loss of duplication) transport facility independent of the Quality-of-Service," (lines 49-57 of column 1 in Ketcham). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the prioritization factor being controlled to maintain a minimum desired data rate associated with each unit of data in the system as taught by Bahl.

5. Claims 8, 17, and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Bahl and Ketcham as applied to claims 1, 10, and 19 respectively.

As per claims 8, 17, and 26, Bahl fails to teach: a plurality of carriers are available to transmit the units of data and the control system is further adapted to generate the prioritization factor for each unit of data for each of the plurality of carriers and schedule the transmission of each unit of data on at least one of the plurality of carriers based on the prioritization factor. However, Ketcham discloses: "In one exemplary preferred embodiment of the present invention, a network device such as a routing/switching device will reserve a data channel or timeslot for data packets in the data stream. Allocating network device resources on a network device to provide a desired priority to data packets in the data stream includes allocating resources to

provide a desired processing priority including a Quality-of-Service to data packets in the data stream," (lines 58-65 of column 12).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have a plurality of carriers available to transmit the units of data and the control system is further adapted to generate the prioritization factor for each unit of data for each of the plurality of carriers and schedule the transmission of each unit of data on at least one of the plurality of carriers based on the prioritization factor. "There have been attempts to use Class-of-Service ("CoS"), Quality-of-Service ("QoS") or Type-of-Service ("ToS") parameters in routers and switches in computer networks. As is known in the art, a router routes data packets to an appropriate device on a network topology. A switch switches data among multiple channels and/or time slots. A Class-of-Service provides a reliable (i.e., error free, in sequence, with no loss of duplication) transport facility independent of the Quality-of-Service. Class-of-service parameters typically include maximum downstream data rates, maximum upstream data rates, upstream channel priority, guaranteed minimum data rates, guaranteed maximum data rate and other parameters," (lines 49-61 of column 1 in Ketcham). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have a plurality of carriers available to transmit the units of data and the control system is further adapted to generate the prioritization factor for each unit of data for each of the plurality of carriers and schedule the transmission of each unit of data on at least one of the plurality of carriers based on the prioritization factor in the system as taught by Bahl.

6. Claims 2, 11, and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Bahl and Ketcham as applied to claims 1, 10, and 19 respectively, further in view of Fawaz et al. (U.S. 6,654,374 B1) hereinafter referred to as Fawaz.

As per claims 2, 11, and 20, Bahl fails to teach: the adaptive fairness objective functions adaptively increase the prioritization factor as an average data rate associated with each unit of data approaches the minimum desired data rate associated with each unit of data. However, Fawaz discloses: "A packet-switched communication network in accordance with the invention provides a guaranteed minimum bandwidth between pairs of Packet Switches by defining Service Level Agreements (SLAs). An SLA is defined by at least a source identifier, a destination identifier, and a minimum data rate although other information can also be used," (Abstract).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the adaptive fairness objective functions adaptively increase the prioritization factor as an average data rate associated with each unit of data approaches the minimum desired data rate associated with each unit of data. "A scheduler in the node ensures that packets from each SLA are scheduled for transmission at at least the minimum data rate corresponding to the SLA," (lines 41-44 of column 4 in Fawaz). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the adaptive fairness objective functions adaptively increase the prioritization factor as an average data rate

associated with each unit of data approaches the minimum desired data rate associated with each unit of data in the system as taught by Bahl and Ketcham.

7. Claims 3, 12, and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Bahl and Ketcham as applied to claims 1, 10, and 19 respectively, further in view of Liao et al. (U.S. PG Pub. 2004/0136379 A1) hereinafter referred to as Liao.

As per claims 3, 12, and 21, Bahl fails to teach: when there are insufficient resources to maintain the minimum desired data rate associated with each unit of data, the control system is further adapted to control the prioritization factor for each unit of data to reduce the variance in data rates associated with the units of data between different users. However, Liao discloses: "In addition, it can be desirable to adjust the allocations of bandwidth in such a way as to minimize the variance of the adjustment amounts, the sum of the adjustment amounts, and/or the sum of the absolute values of the adjustment amounts," (paragraph [0227] on page 21).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention, that when there are insufficient resources to maintain the minimum desired data rate associated with each unit of data, the control system is further adapted to control the prioritization factor for each unit of data to reduce the variance in data rates associated with the units of data between different users. "Because of the risk of delay or loss of data, customers of the network sometimes seek to protect themselves by entering into "service level agreements" which can include guarantees such as maximum packet loss rate, maximum packet delay, and maximum

delay "jitter" (i.e., variance of delay)," (paragraph [0055] on page 4 of Liao). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the control system further adapted to control the prioritization factor for each unit of data to reduce the variance in data rates associated with the units of data between different users when there are insufficient resources to maintain the minimum desired data rate associated with each unit of data in the system as taught by Bahl and Ketcham.

8. Claims 4-5, 13-14, and 22-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Bahl and Ketcham as applied to claims 1, 10, and 19 respectively, further in view of Walton et al. (U.S. 6,493,331 B1) hereinafter referred to as Walton.

a. As per claims 4, 13, and 22, Bahl fails to teach: the adaptive fairness objective is configurable to make overall throughput of the units of data inversely proportional to fairness between different users. However, Walton discloses: "As an example of a simple ranking scheme, users are given a ranking based on their overall average throughput. In this example, the ranking assigned to the users are inversely proportional to the C/I of the users (i.e., lowest C/I=highest priority), "(lines 28-32 of column 41).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the adaptive fairness objective configurable to make overall throughput of the units of data inversely proportional to fairness between different users. "In an embodiment, a cell is provided with information descriptive of the

interference experienced by each active user in the cell due to transmissions from other cells. When the number of active users exceeds the number of allocated channels, the cell can then select the user with the higher tolerance to interference and place that user in an overlapping (non-orthogonal) channel that provides the best overall C/I for that user," (lines 57-64 of column 40 in Walton) and "The last column is the rank associated with each user in cell 1, where a rank of 1 typically indicates the highest priority. The ranking can be based on a number of ranking schemes, some of which are described below, depending on the overall objectives of the system," (lines 24-28 of column 40 in Walton). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the adaptive fairness objective configurable to make overall throughput of the units of data inversely proportional to fairness between different users in the system as taught by Bahl and Ketcham.

b. As per claims 5, 14, and 23, Bahl teaches time-sensitive data (lines 30-40 of column 2).

Bahl fails to teach: select ones of the units of data are time-sensitive and associated with a delay bound and the control system is further adapted to control the prioritization factor for each time-sensitive unit of data in inverse proportion to an amount of time prior to the delay bound associated with each time-sensitive unit of data wherein the time-sensitive units of data are given higher priorities as the delay bounds approach. However, Walton discloses: "The type of data to be transmitted may be considered in assigning priority among users. Some data types are time sensitive and

require quick attention. Other data types can tolerate longer delay in transmission. Higher priority can be assigned to data that is time critical," (lines 40-44 of column 23), and "As an example of a simple ranking scheme, users are given a ranking based on their overall average throughput. In this example, the ranking assigned to the users are inversely proportional to the C/I of the users (i.e., lowest C/I=highest priority)," (lines 28-32 of column 41). The combination of these two aspects as disclosed by Walton in combination with Bahl and Ketcham clearly embodies the claimed invention.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have select ones of the units of data are time-sensitive and associated with a delay bound and the control system is further adapted to control the prioritization factor for each time-sensitive unit of data in inverse proportion to an amount of time prior to the delay bound associated with each time-sensitive unit of data wherein the time-sensitive units of data are given higher priorities as the delay bounds approach. "As an example, data being retransmitted can be given higher priority than data transmitted for the first time. The retransmitted data typically corresponds to data previously transmitted and received in error. Since the signal processing at the receiver may be dependent on the data received in error, the retransmitted data can be given higher priority.

The type of data services being provided may be considered in assigning user priority. Higher priority can be assign to premium services (e.g., those charged higher prices). A pricing structure can be established for different data transmission services. Through the pricing structure, the user can determine, individually, the priority and the

type of service the user can expect to enjoy," (lines 44-57 of column 23 in Walton). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have select ones of the units of data are time-sensitive and associated with a delay bound and the control system is further adapted to control the prioritization factor for each time-sensitive unit of data in inverse proportion to an amount of time prior to the delay bound associated with each time-sensitive unit of data wherein the time-sensitive units of data are given higher priorities as the delay bounds approach in the system as taught by Bahl and Ketcham.

9. Claims 6, 15, and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Bahl, Ketcham, and Walton as applied to claims 5, 14, and 23 respectively.

Bahl teaches: each time-sensitive unit of data is associated with a start time (lines 2-10 of column 2); the start time represents a threshold when the prioritization factor for the unit of data is adjusted based on the delay bound (lines 30-40 of column 2).

10. Claims 7, 16, and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Bahl, Ketcham, and Walton as applied to claims 5, 14, and 23 respectively, further in view of Kilkki et al. (U.S. 6,421,335 B1) hereinafter referred to as Kilkki.

Bahl fails to teach: the control system is further adapted to adjust the prioritization factor for each time-sensitive unit of data to control the maximum percentage of the units of data that can be dropped prior to transmission. However,

Kilkki discloses: "In one embodiment of the invention, the load is determined as the ratio of number N users to the maximum number of users N.sub.max allowed. Thus, PL.sub.a changes over time with a changing number of concurrent users. Where the packet has a priority equal to or greater than PL.sub.a, the packet is transmitted. Otherwise it is selectively discarded or suspended for a period of time. Where the packet is suspended, it is suspended until the MBR drops down enough due to the elapsed time (during which the average bit rate goes down), or until the load of the interface decreases. Where a packet's priority is less than PL.sub.a, it is typically discarded in time sensitive situations, such voice packets," (lines 12-24 of column 7).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the control system further adapted to adjust the prioritization factor for each time-sensitive unit of data to control the maximum percentage of the units of data that can be dropped prior to transmission. "Essentially, with increasing load (N/N.sub.max), the allowed priority level PL.sub.a increases and reduces the number of packets that are allowed to be transmitted. Therefore, users with higher established priorities (i.e., higher NBR or due to moderate transmission rates) have a relatively greater chance of having their data packets transmitted successfully," (lines 25-30 of column 7 in Kilkki). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the control system further adapted to adjust the prioritization factor for each time-sensitive unit of data to control the maximum percentage of the units of data that can be dropped prior to transmission in the system as taught by Bahl, Ketcham, and Walton.

11. Claims 9, 18, and 27 rejected under 35 U.S.C. 103(a) as being unpatentable over Bahl and Ketcham as applied to claims 1, 10, and 27 respectively, in view of Fawaz and Walton.

As per claims 9, 18, and 27, Bahl fails to teach: the adaptive fairness objective functions adaptively increase the prioritization factor as an average data rate associated with each unit of data approaches the minimum desired data rate associated with each unit of data. However, Fawaz discloses: "A packet-switched communication network in accordance with the invention provides a guaranteed minimum bandwidth between pairs of Packet Switches by defining Service Level Agreements (SLAs). An SLA is defined by at least a source identifier, a destination identifier, and a minimum data rate although other information can also be used," (Abstract).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the adaptive fairness objective functions adaptively increase the prioritization factor as an average data rate associated with each unit of data approaches the minimum desired data rate associated with each unit of data. "A scheduler in the node ensures that packets from each SLA are scheduled for transmission at at least the minimum data rate corresponding to the SLA," (lines 41-44 of column 4 in Fawaz). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the adaptive fairness objective functions adaptively increase the prioritization factor as an average data rate

associated with each unit of data approaches the minimum desired data rate associated with each unit of data in the system as taught by Bahl and Ketcham.

Bahl also fails to teach: select ones of the units of data are time-sensitive and associated with a delay bound and the control system is further adapted to control the prioritization factor for each time-sensitive unit of data in inverse proportion to an amount of time prior to the delay bound associated with each time-sensitive unit of data wherein the time-sensitive units of data are given higher priorities as the delay bounds approach. However, Walton discloses: "The type of data to be transmitted may be considered in assigning priority among users. Some data types are time sensitive and require quick attention. Other data types can tolerate longer delay in transmission. Higher priority can be assigned to data that is time critical," (lines 40-44 of column 23), and "As an example of a simple ranking scheme, users are given a ranking based on their overall average throughput. In this example, the ranking assigned to the users are inversely proportional to the C/I of the users (i.e., lowest C/I=highest priority)," (lines 28-32 of column 41). The combination of these two aspects as disclosed by Walton in combination with Bahl and Ketcham clearly embodies the claimed invention.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have select ones of the units of data are time-sensitive and associated with a delay bound and the control system is further adapted to control the prioritization factor for each time-sensitive unit of data in inverse proportion to an amount of time prior to the delay bound associated with each time-sensitive unit of data wherein the time-sensitive units of data are given higher priorities as the delay bounds

approach. "As an example, data being retransmitted can be given higher priority than data transmitted for the first time. The retransmitted data typically corresponds to data previously transmitted and received in error. Since the signal processing at the receiver may be dependent on the data received in error, the retransmitted data can be given higher priority.

The type of data services being provided may be considered in assigning user priority. Higher priority can be assign to premium services (e.g., those charged higher prices). A pricing structure can be established for different data transmission services. Through the pricing structure, the user can determine, individually, the priority and the type of service the user can expect to enjoy," (lines 44-57 of column 23 in Walton). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have select ones of the units of data are time-sensitive and associated with a delay bound and the control system is further adapted to control the prioritization factor for each time-sensitive unit of data in inverse proportion to an amount of time prior to the delay bound associated with each time-sensitive unit of data wherein the time-sensitive units of data are given higher priorities as the delay bounds approach in the system as taught by Bahl and Ketcham.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Belknap et al. (U.S. 5,586,264) discloses video optimized media streamer with cache management.

Kidder et al. (U.S. 5,903,735) discloses method for transmitting data having minimal bandwidth requirements.

Tiedemann, Jr. et al. (U.S. 5,914,950) discloses method for reverse link rate scheduling.

Masuda et al. (U.S. PG Pub. 2001/0007560 A1) discloses multi-layer class identifying communication apparatus with priority control.

Valko et al. (U.S. 6,266,323 B1) discloses resource estimation for variable bit rate data sources.

Diedrich et al. (U.S. 6,336,143 B1) discloses method for multimedia data interchange with pacing capability in a distributed data processing system.

Mallory (U.S. PG Pub. 2002/0042836 A1) discloses method of enhancing network transmission of a priority-enabled frame-based communications network.

Jacobs et al. (U.S. 6,385,678 B2) discloses method for bus arbitration with weighted bandwidth allocation.

Chopra et al. (U.S. 6,510,509 B1) discloses method for high-speed network rule processing.

Seibert (U.S. 6,601,107 B1) discloses adaptive fuzzy control of data acquisition and broadcasting.

Williams (U.S. 6,785,889 B1) discloses system for scheduling bandwidth resources using a Kalman estimator with active feedback.

Bao et al. (U.S. 6,788,687 B2) discloses method for scheduling packet data transmission in a wireless communication system.

David et al. (U.S. 6,810,503 B1) discloses method for controlling the timing of the invocation of events within a computer runtime environment.

Olsson et al. (U.S. 6,845,105 B1) discloses method for maintaining sequence numbering in header compressed packets.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Meucci at (571) 272-3892. The examiner can normally be reached on Monday-Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey, can be reached at (571) 272-3896. The fax phone number for this Group is (703) 872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [michael.meucci@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published

in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JACK B. HARVEY
SUPERVISORY PATENT EXAMINER